

User's Guide



P/2 DA4xi
P/2 DA6xi

VGA Distribution Amplifiers

Precautions

Safety Instructions • English



This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.



This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français



Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).



Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions • Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conservé les instructions • Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Éviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch



Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.



Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits- und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español



Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.



Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean específicamente recomendados por el fabricante, ya que podrían implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation • Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au reut les batteries usagées conformément aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stromversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernern der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el equipo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearla ni eliminarla.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/ mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805, USA

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Japan:

Extron Electronics, Japan
Daisan DMJ Bldg. 6F,
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Description

The P/2 DA4xi and P/2 DA6xi VGA-UXGA are high performance distribution amplifiers featuring one input/four outputs and one input/six outputs, respectively. Both P/2 DA units accept a VGA-UXGA video signal from a computer and distribute the signal to individually buffered outputs and one buffered loop-through. Each output is extendable up to 250' (76.2 m) with Extron's VGA cables.

Examples of typical installations are shown in the diagrams on the following pages.

Features

- **Bandwidth** — 300MHz (-3dB) RGB video bandwidth, fully loaded
- **Video Gain switch** — Selectable video gain of 0.7 V or 1 V (when the input signal is 0.7 V p-p) to compensate for long cable runs
- **Power LEDs** — Conveniently located on both front and back panels
- **Versatile mounting options** — A metal enclosure and a wide variety of mounting options
- **ID bits pass through**

Installation

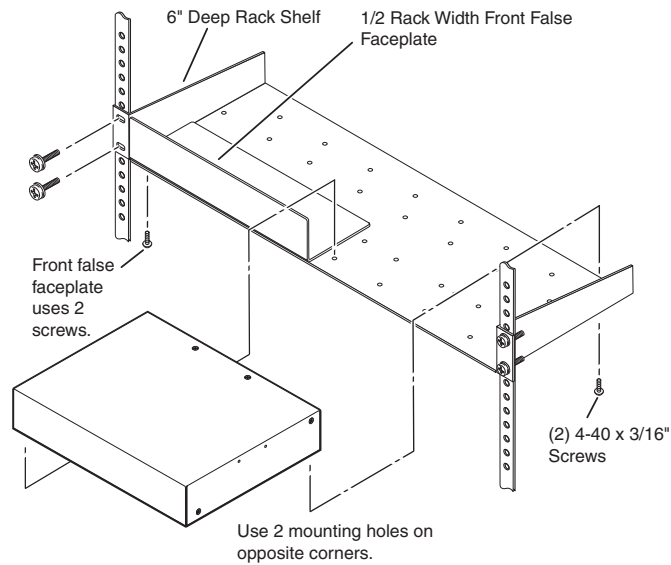
The P/2 DA4xi and P/2 DA6xi can be mounted on a rack shelf, under-desk or through-desk.

Rack mounting

To install and set up the P/2 DA4xi or P/2 DA6xi on a rack, follow these steps:

1. Power off the computer and its local monitor.
2. For rack mounting, mount the unit on one side of an optional 6" Deep 1U Rack Shelf Kit (part #60-190-10), 6" Deep Basic Rack Shelf (part # 60-604-10), or other 9.5" deep rack shelves (part #60-190-01 or 60-604-01). See the illustration on the following page.
 - a. If rubber feet were installed on the bottom of the case, remove them.

- b. Mount the unit on the rack shelf, as shown above, using two 4-40 x 3/16 screws in opposite (diagonal) corners to secure the case to the shelf.

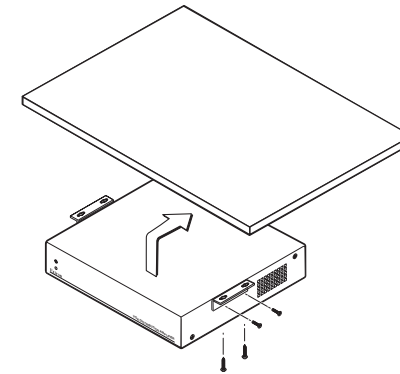


3. Connect the computer's VGA output to the input of the distribution amplifier.
4. Connect a monitor to the Local Monitor output of the distribution amplifier.
5. Connect LCD panels, VGA-UXGA monitors, or projectors to the other outputs as desired.
6. Connect power to the distribution amplifier.
7. Power on the local monitor, display device(s) and computer.

Under-desk mounting

Under-desk mount the unit using the optional mounting kit (part #70-077-01) as follows:

1. If rubber feet were installed on the unit, remove them.
2. Attach the mounting brackets to the unit with the machine screws provided (see the following illustration).

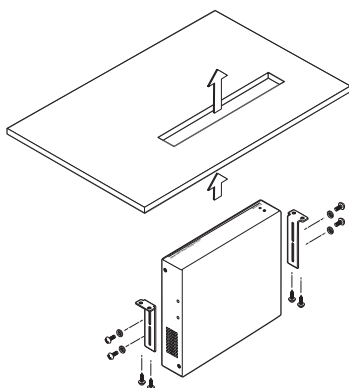


3. Hold the unit with the attached brackets against the underside of the table or other furniture. Mark the location of the screw holes of the bracket on the mounting surface.
4. Drill 3/32" (2 mm) diameter pilot holes, 1/4" (6.3 mm) deep in the mounting surface at the marked screw locations.
5. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until just less than 1/4" of the screw head protrudes.
6. Align the mounting screws with the slots in the brackets and place the unit against the surface, with the screws through the bracket slots.
7. Slide the unit slightly forward or back, then tighten all four screws to secure the unit in place.

Through-desk mounting

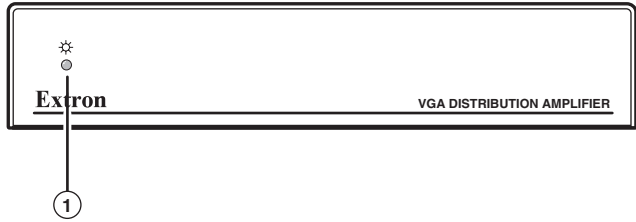
Through-desk mount the unit using the optional mounting kit (part #70-077-02) as follows:

1. Loosely attach the mounting brackets to the unit using the four machine screws and washer supplied with the mounting kit.
2. Insert two screws on each side of the unit through the adjustable (slotted) holes on the brackets. See the illustration below.



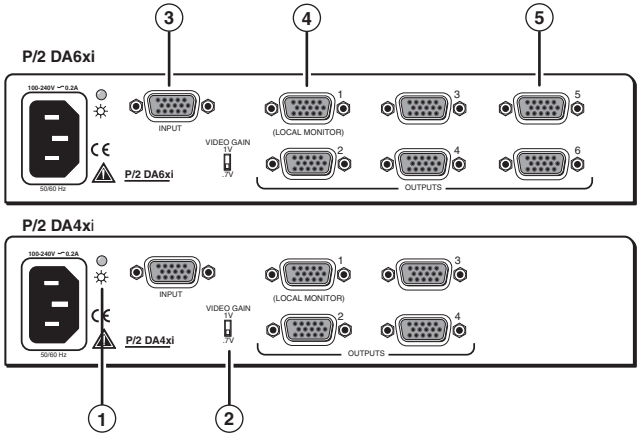
3. Hold the unit against the underside of the surface through which it will be mounted. Mark the four screw holes on the underside of the surface to which you are mounting the device.
4. Drill four pilot holes, each 3/32" in diameter by 1/4" deep, where you made marks.
5. Using the four wood screws provided, attach the brackets to the mounting surface.
6. Slide the unit up and down or back and forth in the mounting brackets until the face of the unit is at the desired height. Tighten the screws that secure the bracket in place.
 - a. Mark the location of the brackets relative to the screws.
 - b. Remove the unit from the underside of the surface.
 - c. Tighten the screws.
 - d. Replace the switcher on the underside of the surface (step 5).

Front panel indicators



- ① **Power LED:** A green LED indicates that the distribution amplifier is receiving power.

Rear panel features



- ① **Power LED** — A green LED indicates that the distribution amplifier is receiving power.
- ② **Video Gain sliding switch** — Used for installations with long output cable runs, the 1.0 V (up) position gives a brighter picture. The default Video Gain setting is 0.7 V (down).
- ③ **Input Connector** — Connect the input cable (using VGA-UXGA signals) to the DA's 15-pin HD female connector.
- ④ **Local Monitor** — Connect a local monitor to this 15-pin HD female connector for loop-through capability.
- ⑤ **Output Connector** — Connect the output device to the 15-pin HD female connector.

Operation

After the distribution amplifier and its connected devices are powered up, the system is fully operational. If any problems occur, verify that the cables are properly routed and connected.

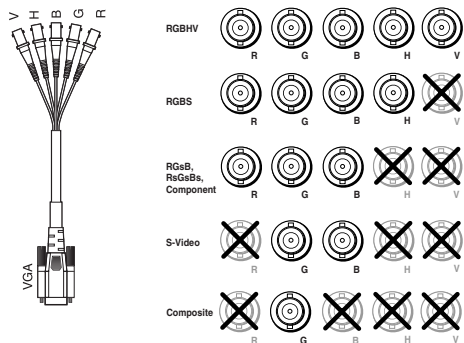
Signal input and output connections

All connections, including power, input, and output are located on the back of the rear panel of the P/2 DA4xi and P/2 DA6xi.

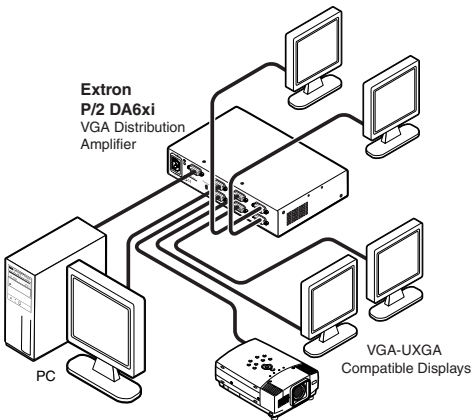
To make input and output connections to other devices, do the following:

- 1. Turn off the PC and local monitor.
- 2. Connect the input cable of the P/2 distribution amplifier (DA) to the computer's VGA-UXGA output.

If you wish to send RGBHV, RGBS, RGBsB, RsGsBs, component video, S-video, or composite video signals, use a standard SY breakout cable to make the connection. See the illustrations below.



- 3. Connect the computer's monitor to the Local Monitor output of the DA.
- 4. Connect VGA-compatible monitors or projectors to the outputs of the DA.
- 5. Turn on the local monitor, other display devices, and the PC.



Video Gain

The Video Gain switch is located on the rear panel with a default setting of 0.7 V (down). **Set the switch to 1 V when long cable runs affect the picture quality.** This boosts the signal level to compensate for degradation due to cable length.

Signal Compatibility

Signal compatibility is affected by voltage. When the Video Gain switch is set to

- 0.7 V (default) — the P/2 DA can pass all signal types (VGA-UXGA, RGBHV, RGBS, RGBsB, RsGsBs, component video, S-video and composite video).
- 1 V — the P/2 DA can only pass the RGBHV and RGBS video types.

Parts

Included parts

Included Parts	Replacement part number
12VDC, 1A external power supply	70-055-01
IEC power cord	
Rubber feet (4)	
P/2 DA4xi and P/2 DA6xi User's Guide	68-991-01

Optional accessories

Accessories	Part number
1U 6" Deep Rack Shelf Kit	60-190-10
1U 6" Deep Basic Rack Shelf	60-604-10
1U Universal Rack Shelf Kit	60-190-01
1U Basic Rack Shelf	60-604-01
Through-desk mounting kit	70-077-02
Under-desk mounting kit	70-077-01
VGAM MHR, Male to Male cable, 6'	26-238-01

P/2 DA4xi and P/2 DA6xi, cont'd

Video

Gain	0 dB or +3 dB (when input is 0.7 Vp-p, output is 0.7 V or 1.0 V, switchable)
Bandwidth	300 MHz (-3 dB), fully loaded

Video input

Number/signal type	1 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs, component video, S-video, composite video
Connectors	(1) 15-pin HD female (optional Mac/VGA adapters are available)
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB 0.3 Vp-p for R-Y and B-Y of component video, and for C of S-video
Minimum/maximum levels	Analog: 0.3 V to 1.5 Vp-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 135 kHz
Vertical frequency	30 Hz to 150 Hz
Return loss	<-40 dB @ 5 MHz

Video output

Number/signal type	
P/2 DA4xi	4 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs, component video, S-video, composite video (follows input type)
P/2 DA6xi	6 VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs, component video, S-video, composite video (follows input type)
Connectors	
P/2 DA4xi	(4) 15-pin HD female
P/2 DA6xi	(6) 15-pin HD female
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB 0.3 Vp-p for R-Y and B-Y of component video, and for C of S-video
Minimum/maximum levels	0.3 V to 5.0 Vp-p (follows input)
Impedance	75 ohms
Return loss	<-40 dB @ 5 MHz
DC offset	±5 mV with input at 0 offset

Sync

Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB, RsGsBs (follows input)
Input level	1.8 V to 5.0 Vp-p
Output level	TTL: 5.0 Vp-p, unterminated
Input impedance	510 ohms
Output impedance	50 ohms
Max. propagation delay	60 ns
Max. rise/fall time	2 ns
Polarity	Positive or negative (follows input)

General

Power	100 VAC to 240 VAC, 50/60 Hz, 12 watts, internal, autoswitchable
Temperature/humidity	Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, noncondensing Operating +32° to +122°F (0° to +50°C) / 10% to 90%, noncondensing
Rack mount	Yes, with optional 1U rack shelf, part #60-190-01, 60-604-01, 60-190-10, 60-604-10 Also furniture mountable with optional brackets
Enclosure type	Metal
Enclosure dimensions	1.6" H x 8.7" W x 6.0" D (1U high, half rack wide) 4.1 cm H x 22.1 cm W x 15.2 cm D (Depth excludes connectors.)
Product weight	2.0 lbs (0.9 kg)
Shipping weight	
P/2 DA4xi	4 lbs (2 kg)
P/2 DA6xi	5 lbs (3 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE All nominal levels are at ±10%

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